Custer National Forest, Sioux Ranger District

Riley Pass Newsletter

December 2011

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This newsletter provides information regarding ongoing reclamation work at the Riley Pass Abandoned Uranium Mines Site. Riley Pass is in the North Cave Hills portion of the Custer National Forest's Sioux Ranger District, approximately 25 miles north of Buffalo, SD.

The 250 acre site consists of 12 bluffs first mined in the 1950s (Photo 1). These mined bluffs range in size from a few acres to 150 acres and contain mine wastes with hazardous substances such as: arsenic, molybdenum, thorium, radium, and uranium. Human health and environmental concerns are related to elevated levels of arsenic and radium 226.

Mine Clean-up

The reclamation approach is to consolidate, compact and then bury material containing contaminants that could pose an unacceptable risk to human health and the environment.

Erosive spoils will be graded and brought up to the highwall* (unexcavated face) of each bluff. Mine waste* will be compacted and capped to reduce exposure to hazardous substances. Compaction tests and proper protocol and procedures for this reclamation approach will be adhered to throughout the project. The final step, prior to monitoring the sites, will be to cover each area with soil and compost and revegetate the disturbed areas.

Photo 1: Uranium mining, circa late 1950's

New On-Scene Coordinator Assigned

In April 2011, Dan Seifert was designated in compliance with the National Contingency Plan,* as the On-Scene Coordinator (OSC) for the Riley Pass Uranium Site removal actions. The OSC directs response efforts and coordinates all other efforts at the scene. Dan is the Assistant Forest Geologist for the Custer National Forest. His experience includes environmental planning, administration of active mining operations, and mine reclamation of both active and inactive mine sites. Questions regarding the Riley Pass Project can be directed to Dan at (406) 446-4520 or dseifert@fs.fed.us.

(* Asterisk refers to terminology, defined page 4)

BLUFFS J & K RECLAMATION

Bluffs J and K were the first Non-Tronox bluffs* reclaimed by the Forest Service (Photo 2). Earth work and seeding was completed in fall 2010 under contract by Belair Builders, Inc., with an estimated $350,000 total cost.

Spring 2011 brought heavy rains causing some minor erosion, but resulting in seeding coming in very well (Photo 3). Erosion control installed on the access road to Bluff K proved effective during the heavy spring rains. Reclaimed areas were fenced and additional erosion control matting was installed in spring 2011. Revegetation continued to progress well over the summer and into fall (Photo 4).

Overall, the reclamation approach at J and K is meeting objectives and revegetation is progressing. Monitoring and updates will continue at these bluffs.

Photo 2: Ariel - Reclamation Bluffs J and K

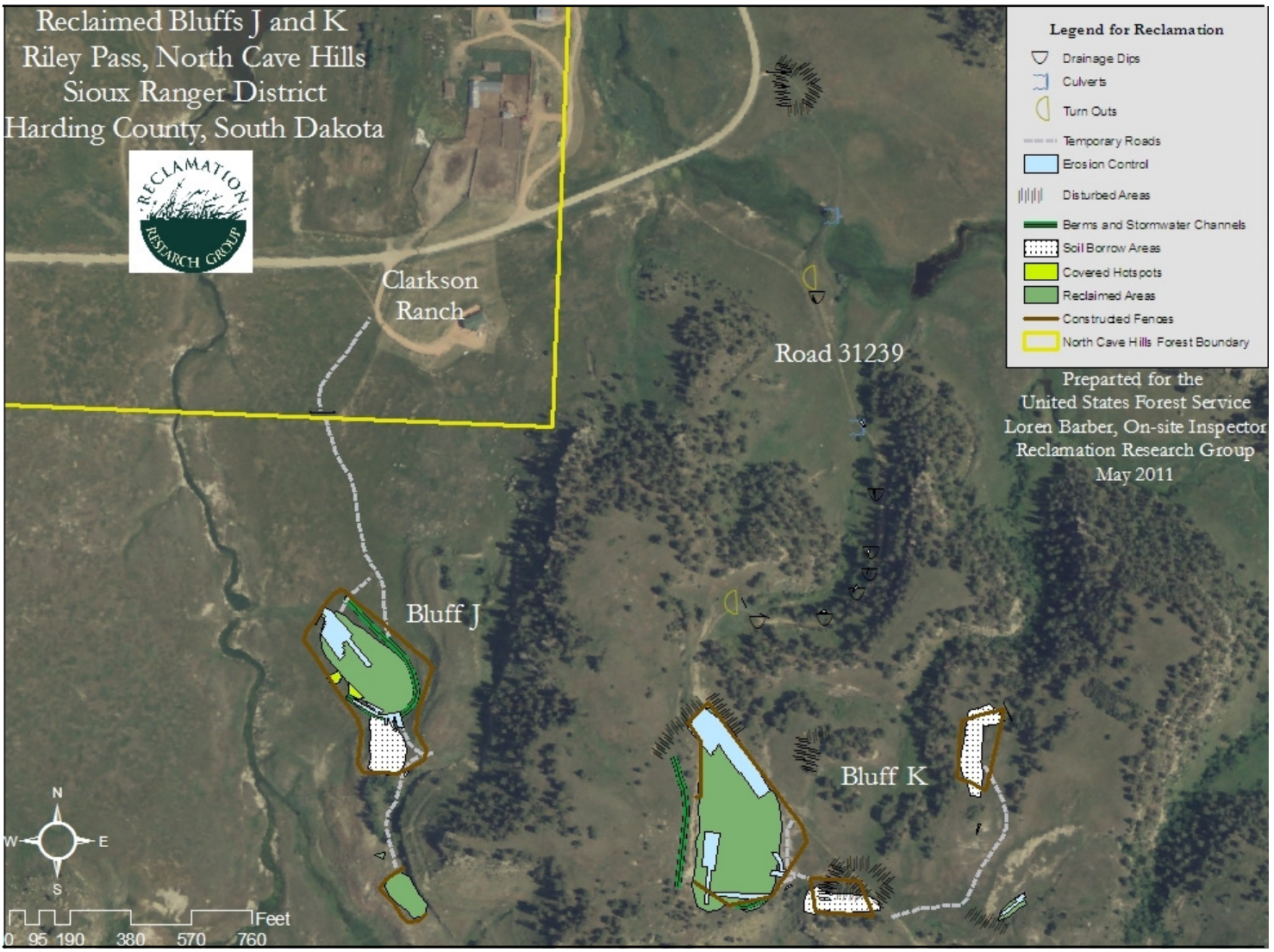
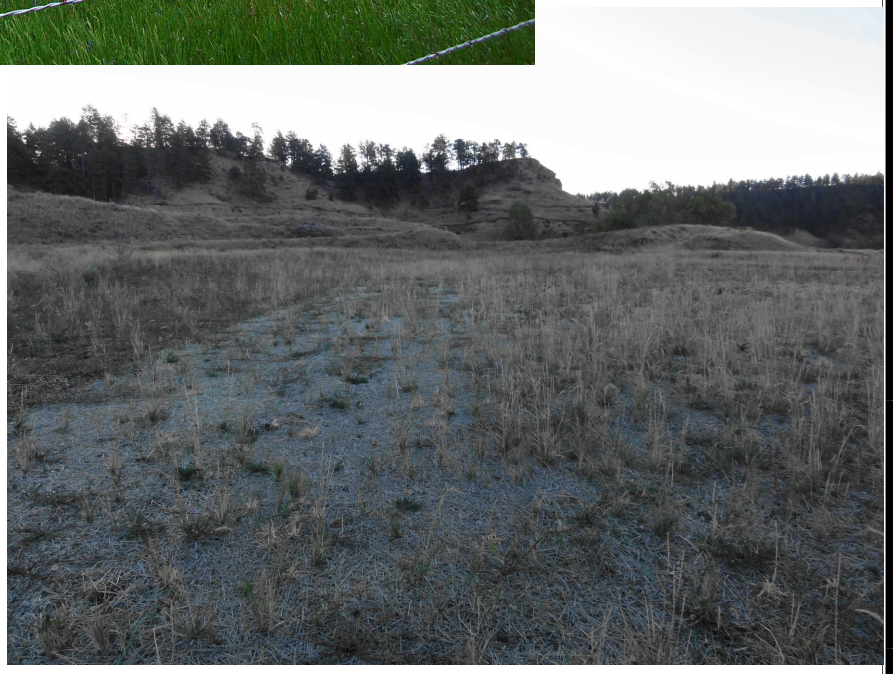


Photo 3 (left)
Late Spring, 6/14/2011 Bluff J-1. Erosion control and seeding.

Photo 4 (below) Fall, 10/19/2011 Bluff J-1. Revegetation at Bluff.



COMPLETED 2011 WORK

Road 3130 Improvements and Bluff I-2 Reclamation

Belair Builders, Inc. was awarded the bid for Road 3130 improvements and Bluff I-2 reclamation and they began work in August 2011. Road 3130 is a priority improvement because it provides access to Bluff I-2 and other mined bluffs where future reclamation is planned. Road improvements were completed by Belair to accommodate construction equipment access and soil transport.

Completed road improvements include:

- Road widening and turn-out construction,
- Cattleguard replacement,
- Ditch reconstruction,
- Grading, re-surfacing, and installation of culverts and drainage dips.

At Bluff I-2 work completed includes consolidating and compacting mine wastes and spoils against the hillside (Photos 6 and 7). A temporary road, (Photo 5) was constructed for hauling soil from the borrow* area to I-2 and to provide soil for future reclamation of other mined bluffs. Belair suspended work at the end of October and plans to resume operations in May 2012. Temporary erosion control berms were installed around the compacted mine waste and spoils to capture any eroded materials.

In spring 2012, Belair Builders will begin to remove top soil from the borrow area and place it on Bluff I-2. The upper portions of soil in the borrow area will be salvaged and utilized to re-cover the borrow area after soil is extracted. All disturbed areas will be seeded with a native weed-free seed mix. Steeper slopes will be covered with biodegradable erosion matting. A permanent earthen berm will be constructed at the base of the compacted and capped mine waste to futher prevent erosion and sediment transport.

(* Asterisk refers to terminology, defined page

Photo 5 (left): 9/28/2011 - Construction of temporary road to soil borrow* area.

Photo 6 (above) Bluff I-2 compaction of mine waste repository.

Photo 7 (left) Bluff I-2 waste removal viewed from repository.

CONTRACTS AND PLANNED 2012 WORK

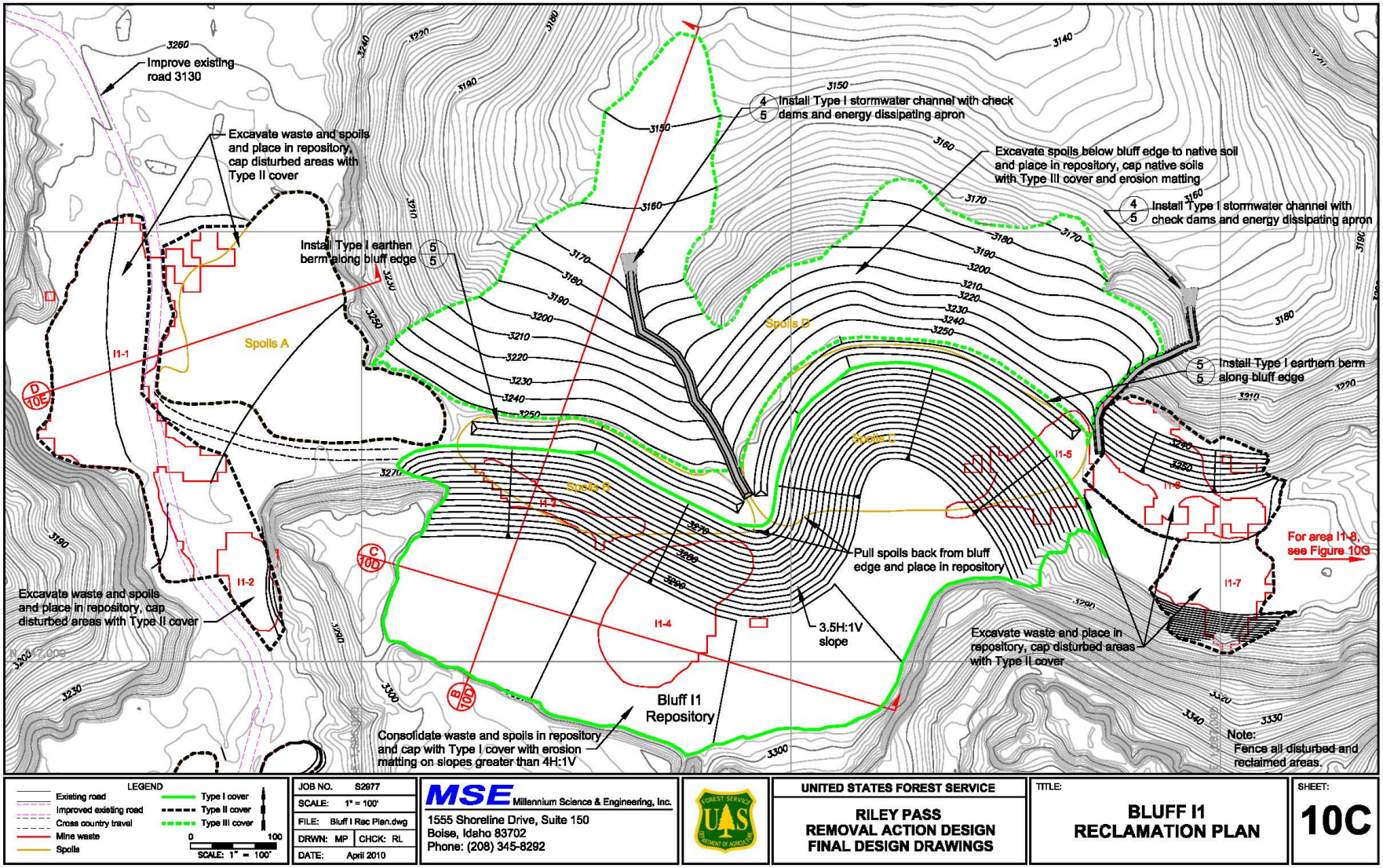
The Forest Service is currently compiling contract specifications for 2012 Riley Pass work. The contract is anticipated to be advertised and awarded in spring 2012. It is estimated that work will be completed at Bluff I-1, Bluff I-3, and Bluff F. Figure 1 is the reclamation plan for Bluff I-1 only. Based on the I-1 reclamation plan, Bluff I-3 is south of I1-1 in the map and Bluff F is north of I1-1.

During the upcoming year, 2012 work will consist of consolidating and compacting mine waste with high levels of arsenic and radium 226 in a repository at Bluff I-1. Future work at I-1 will include capping this waste with surrounding mine spoils and revegetating steep mine spoil areas. Other planned work includes fencing sediment capture ponds at the base of Bluff B

UNDERSTANDING TERMINOLOGY*

Many of the following terms are referenced in the map on page 5. A portion of the design work in the map will be implemented in 2012. Please refer to the map to better understand individual locations and actions.

Non-Tronox Bluffs - Non-Tronox Bluffs - mined Bluffs A, F, I, J and K where no potentially responsible party has been determined under CERCLA (Comprehensive Environmental Response, Compensation and Liability Act, commonly known as Superfund).
Check Dams - Constructed obstructions, such as rock or earthen barriers, placed in a channel to slow water velocity and prevent erosion.
4H:1V Slope - A slope with four horizontal units for each vertical unit (four feet horizontal for every one foot vertical).
3.5H:1V Slope - A slope with 3.5 horizontal units for each vertical unit (3.5 feet horizontal for every one foot vertical).
Energy Dissipating Apron - Rock placed at a channel outlet to slow water velocity and prevent erosion.
Highwall - The unexcavated face of exposed overburden and coal or ore in an opencut mine
Borrow - Cover soil used to reclaim areas that have been disturbed by mining. Cover soil is intended to facilitate revegetation of reclaimed areas.
Mine Spoils - native materials comprised of overburden or other materials that do not exceed the Riley Pass cleanup levels, but have undesirable geotechnical or agronomic properties.
Mine Waste - Mined material at Riley Pass with greater than 142 mg/kg arsenic and/or greater than 30 pCi/g Radium 226.
National Contingency Plan - The National Oil and Hazardous Substances Pollution Control Plan (NCP) is codified in Federal Regulation at 40 CFR 300. The NCP provides organizational structure and procedures for responding to hazardous substance, pollutant and contaminant releases.



Type I Cover - 18 inches of cover soil, 1.5 inches of compost (100 tons per acre), incorporated into the cover material, fertilizer and seed. Applies to excavated and consolidated mine waste and spoils.

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Type II Cover - 6 inches of cover soil, 1.5 inches of compost (100 tons per acre), incorporated into the cover soil, fertilizer and seed.

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Public Safety Closure order in effect

The Forest Service currently has a closure order in effect for the 3130 road and surrounding bluffs. Riley Pass mine waste contains hazardous substances such as: arsenic, molybdenum, thorium, radium and uranium. Due to the human health, safety and environmental concerns related to elevated levels of these substances, the bluffs and some adjacent areas are closed to all public entry through a special order. The order and closure maps are available upon request and are also posted in the Riley Pass area.

For Additional Information

Documents, maps, and photos regarding site history, human health and environmental concerns and ongoing reclamation at Riley Pass will soon be available for download from the Custer National Forest website at: http://www.fs.fed.us/r1/custer/. Please check online in early 2012.

A mailing list is also being maintained and compiled for this project. You can stay informed by either checking the website at your convenience, signing up for our email notification list to receive an email message when new information is available or signing up for our mailing list to receive future editions of the Riley Pass Newsletter in hard copy or electronic format.

For specific requests, additional information, or to be added to the Riley Pass newsletter mailing list, please contact On Scene Coordinator, Dan Seifert, at dseifert@fs.fed.us or (406) 446-4520.